

LANE (LEVI C.)

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(An Address delivered before the Medico-Chirurgical Society of San Francisco.)

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BY

LEVI C. LANE, A. M., M. D., (Berol.,) M. R. C. S. Eng.

San Francisco, Cal.

presented by the author.



SACRAMENTO, CALIFORNIA :

Reprinted from the Occidental Medical Times, August, 1893.



RUDOLF VIRCHOW.

An Address delivered before the Medico-Chirurgical Society of San Francisco.

By LEVI C. LANE, A. M., M. D., (Berol.,) M. R. C. S. Eng., Professor of Surgery, Cooper Medical College, San Francisco.

Among the names of men who have lived in the nineteenth century, and who are destined to live in human memory, is that of Rudolf Virchow.

Twenty-five years ago I heard an enthusiastic admirer of Virchow say that he would be willing to give five years of his coming life in exchange for one year under the instruction of Virchow. Forty years ago, when attending medical lectures in Philadelphia, I often heard this eminent authority referred to. Nearly twenty years ago I spent over two years in medical and surgical study in Europe, and six months of this time were passed at the University of Berlin, in the class-room of Virchow. That the opinion of him just expressed was not, and is not, an exaggerated estimate of the man, I will endeavor to show by a review of what he has written, of what he has done, and of what he is doing.

Most men who have earned distinction have done so by concentrating their energies in one direction; the striking characteristic of Virchow is that he has reached eminence along several lines, and so much so that had his labors been confined to any one of these he would still have made himself famous. Teacher, writer, pathologist, politician, each and all has he been, and in later years he has also been an investigator in anthropology and in archeology.

The medical studies of Virchow were pursued in Berlin, where the great advantage was his of coming in contact with Johannes Müller, from whom he imbibed that inspiring enthusiasm for medicine which has since incessantly animated the receptive student. The reverent love of Virchow for Müller, and the devotion to his memory is shown in the affectionate tribute paid by the pupil to his teacher, or rather to the wife, Sophie Müller, in an address, half apologetic, for certain opinions held by Virchow but not in harmony with opinions held by the Müllers. The hand of the renowned Schönlein, whose eye first caught a glimpse of the *acarus scabiei*, also contributed its share in the plastic molding of the young Virchow, repaid in after years by the pupil in some memorial pages imbued with affectionate respect.

His successful career as student soon indicated Virchow's fitness as

teacher, and he would at once have been given a position in the Faculty of Frederick-William University, had he not at that time developed qualities which have ever since been predominant characteristics, viz., those of active political partizanship. In this role the part he has played has been a famous one, that of opponent to the policy of the Prussian Government; and this adverse position to the ruling power threw so many barriers in his way to advancement that he sought in Bavaria a more friendly field, and there was honored with the Professorship of Medicine in the famous school of Wurzburg, where he had once been a student. Here, too remote from Prussia to be much distracted by her politics, he gave heart and mind to his favorite study—pathology. In this Bavarian school, then the most frequented one in Germany, the young professor had fortunate association with Scherer, the physiological chemist, with Eisenmann, the German leader in internal medicine, and especially with Kölliker, who was greatly widening, if not actually creating, a new department in medicine, viz., the study of the minute or elementary tissues of the human body; in this work, which was chiefly microscopic, methods were pursued closely cognate to those in use for investigations in elementary pathology.

At this period pathology was a field rich in truths awaiting the hand of discovery, although some work therein had been commenced, for observation had noted many facts; yet, these lay without order, in disjointed incoherence, ready for a master-hand to write them in logical sequence and to give them their true interpretation. The leading students and writers in England on this subject were James Paget and John Simon; forty years ago the writings of each of these were familiar to the medical reader. I recall with what impassioned ardor a little group of internes in a New York hospital read Simon's little volume, and how great was our interest in his statement that the manifestations of disease are in obedience to laws as fixed and consequent as are those of health. Some pages of Paget's most excellent English were translated into the language of Celsus by the writer, who was then preparing for his naval surgical examination.

Much pioneer-work had to be done before the pathologist could successfully labor, and this work was the task of anatomy. Anatomical science in a high degree of development was transmitted from antiquity to modern times through the works of Galen. Galen often suffers abuse in the address delivered at the modern medical commencement, an abuse which might be avoided were the speaker to read Galen's wonderful chapters on anatomy. Whoever will take the pains to read these chapters will find in them an almost accurate epitome of the science as it exists in any one of our text-books on the subject, the chief difference being that the modern book lacks the spirit of religion which pervades the pages of Galen. It is time that this tirade against Galen should

cease; it began with Paracelsus, who burned the works of Galen in the market-place of Bâsle, and in their stead left his own books, which are a strange medley of stray truths, commingled with religion, astrology, alchemy, and incomprehensible mystery. Instead of Galen's rational anatomy, Paracelsus teaches that the body is composed of three elements—mercury, salt, and sulphur. Besides this elementary trilogy into which Paracelsus sought, by alchemy, to resolve the animal body, if one gropes into his mystic magazine, he finds written there *similia similibus curantur*.

After the luminary of medicine had long been dimmed by mystic occultation, approaching total eclipse, it emerged from these clouds and moved in a more rational orbit; the anatomy of Galen, where in error, was revised by Vesalius, Eustachius, Fallopius, and others, whose researches were honored by inscribing the names of their authors on some part of the human body. Each bone, muscle, nerve, and vessel having been carefully studied, anatomical research appeared complete, when Bichat announced that these structures were susceptible of division into tissues. In the midst of the terrors of the French revolution, in 1801, Bichat gave the medical world his remarkable work on anatomy, in which one finds the first systematic classification of the tissues composing the body. To commemorate his services to medical science, the figure of Bichat is given a prominent place on the front of the Pantheon of Paris.

In its work of analysis, research passed from the tissues to their components; the hand of Bichat opened the way and pointed towards a new world, a world of the "infinitely little," as Pascal names the microscopic field which lies beneath man, in contrast to the immensely great one which lies above and beyond him. The scientific side of medicine soon attracted a host of students; the macroscopists and the microscopists were emulous rivals. In anatomy Henle, of Göttingen, explored every inch of the field, and gave the world a work which defies competition; a book in which the usual description of parts is replaced by one that is wholly new; for instance, his description of the sphenoid and the temporal bones is so singularly original that it clings to memory with unusual tenacity; yet, as lecturer before a class, as I remember him, his slow elaboration of his subject approached tediousness.

Near by, labored the histologists, represented in France by Robin, and in Germany by Kölliker and others, who unraveled the normal tissues and studied their elementary components in their primary state, and in their subsequent growth and changes. Cognate to this analytic study arose that of the science of pathology, in which were first studied those alterations in the coarse anatomical structures and their constituent elements which are caused by disease. A great pioneer in the work of making necropsies, and of observing and recording the changes of

structure due to morbid action, was John Baptist Morgagni, who wrote his observations in a famous book named "*Adversaria Anatomica*," a copy of which I exhibit to you; the title literally signifies the daily jottings of anatomical observation. The *Lancet* many years ago adopted as a motto for its section of hospital practice the admirable lines of Morgagni, in which he says, "There is no other certain way to know medicine except to have collected many histories of disease and of *post mortem* examinations of one's own work as well as that of others, and to compare these together."

In this work of Morgagni, and of numerous co-laborers, the pathologist did not reach the nucleus of his subject; he only went as far as his unaided eye could guide him; to follow disease to its ultimate hiding-place he needed the microscope.

The microscope, as indispensable adjuvant in histological and pathological study, came into use slowly. The older generation was content with macroscopy; one generation ago the laboratory and the microscope came into general use. Helmholtz, in his address entitled "Thinking in Medicine," refers to the meagerness of such instruction in his student years as follows: "The instruments were dear and scarce; I became the possessor of one in this wise: During the autumn vacation of 1841 I was ill in the Charité Hospital, Berlin; being a student, medical treatment cost me nothing, and so, when I had recovered, I found myself possessor of a small amount of money which I had thus saved. The instrument purchased was not a beautiful one, yet it permitted me to recognize the nervous processes of the ganglionic cells of invertebrate animals, as described in my inaugural thesis; also to see the vibriones mentioned in my work on Putrefaction and Fermentation."

After a few years' connection with the school at Würzburg, Virchow was called to Berlin and made Professor of Pathology in Frederick-William University. During his connection with the Bavarian School, he had made himself a conspicuous figure in the medical world by the publication of an elaborate work, entitled "*Handbook of Special Pathology and Therapy*." Besides editing this work, Virchow was one of the most extensive contributors to it. This work commences with a volume written by Virchow on "The General Forms of Disturbance and Disease (in the body) and their Ways of Compensation;" in this book the student will find one of the most exhaustive studies of the subject of Inflammation. With the coöperation of a number of the leading medical writers of Germany, this encyclopedic work was continued for several years; among its writers may be mentioned the names of Bamberger, Griesinger, Hasse, Lebert, Traube, and Hebra, each an authority on his subject. In his contributions one catches glimpses of the future Virchow, especially in the chapters on thrombus, obstruction of vessels, and embolism. This encyclopedic work seems to not have reached its com-

pletion, although it contains seven large volumes. It has been succeeded by Ziemssen's great publication, of somewhat similar character.

During the publication of the work referred to, Virchow commenced a journalistic publication, entitled *Archives of Pathological Anatomy, Physiology and Clinical Medicine*. In this journal have appeared papers of great merit on these subjects; in fact, the critical censorship of the eminent editor was such, that the appearance of an article in the *Archives* was guarantee of excellence. As one example may be cited the Essay of Ernest Brücke on the Causes of Coagulation of the Blood; a compend of work done in the years 1853, 1854, and 1855, in which he was competitor for the Astley Cooper prize which, from time to time, was awarded by the authorities of Guy's Hospital for original experimental work. The prize was this time awarded to Richardson, although it is probable that Brücke was nearer than Richardson to the correct solution.

In 1851 Virchow became one of the associate publishers of *Canstatt's Jahresbericht*, a review of the progress of medicine in all parts of the world. This work consists of two large volumes, published annually, and contains a compend of what is published in each and every different language, during the preceding year, in every section of medicine. It began in 1841, under the supervision of Canstatt of Ansbach, who, for a time, as a reviewer, took charge of one of the sections. This publication soon passed into the hands of Eisenmann, who, in 1851, chose as collaborators, Schrër and Virchow; to-day the work is under the control of Virchow and Hirsch. Canstatt began the work with a corps of some seventeen assistants, to each of whom was assigned for review one section of medicine; to-day, the work comprises in all one hundred and four large octavo volumes, and has a corps of reviewers, amounting to nearly forty men of eminence in some department of medicine. I may add that, during the last thirty years, the reading of *Canstatt's Jahresbericht* has occupied many of my leisure hours. As a store of knowledge, in which the annual advancement in medicine is arranged in easy referable order, this work stands without parallel or approximate rival; here anatomist, pathologist, surgeon, physician, and specialist, find all the progress made in his department during the last fifty-two years. In each issue the tireless hand of Virchow furnished, for many years, a review of his favorite subject, pathology.

When, in 1856, Virchow was called to Berlin and given the appointment of Professor of Pathological Anatomy in the University of Frederick-William, he was thirty-six years of age, in the prime of physical and mental vigor, and his connection with one of the first German universities offered him opportunity for the exercise of his best powers as teacher, lecturer, and writer. To give him ample sphere for the teaching of his specialty, there was erected, under his supervision, it is said, a

large building, near the Charité Hospital, specially arranged for pathological work. This edifice, named Pathologisches Institut, contains one room for *post-mortem* examinations, three lecture-rooms, and a museum in which are stored pathological specimens. The Pathological Institute has been the scene and home of Virchow's great work in medicine.

In the winter semester of 1857 and 1858 this building was rendered famous by the delivery of twenty lectures, in which Virchow elaborated and presented his doctrine of cellular pathology. These lectures, of which there is a good English translation, introduced a new era in medicine. In a style singularly attractive, they gave to pathology a definite and enduring form, depicting the changes which disease impresses on the tissues, the constituent cell being the prime factor in all the morbid processes. The connective tissue, hitherto viewed as an unimportant or inert contingent of animal structure, was, by Virchow, first shown to have most invaluable functions: as an agent of repair, furnishing elements for the restoration to integrity of diseased or injured parts; while, as a neoplastic factor the cell, whether of connective tissue or of epithelial origin, is the leading agent in the development of sarcoma, carcinoma, and other growths. Although subsequent research has rendered necessary a revision of some points of these doctrines, yet, in the main, they stand in integrity, despite the efforts of some who would fain subvert them.

The publication in 1858 of Cellular Pathology, was followed in 1863 by one of equal eminence, The Pathology of Tumors; the latter may be considered as the supplementary completion of the former. The Pathology of Tumors was also delivered, within a period of five months, as a series of lectures to an audience of students and physicians; and only one with untiring diligence and supreme capabilities for work would, as Virchow was then situated, have undertaken such a task. He acknowledges that, without the aid of the stenographer who copied the lectures, the work would have been impossible; for, as he says in the preface, his duties in the Prussian House of Representatives, to which he had been elected, added to those in the University, left him no leisure for a new publication. The work was, however, accomplished, although not completed as the author intended; yet, it will remain as a great, perhaps the greatest, master-piece in this department. It was the embodiment of the researches of twenty years, and of a personal study of tumors in their different forms. To tranquilize friends who were anxious in regard to his overwork, he assured them that his work in the House of Representatives was often a relaxation, requiring less expenditure of force than that of the writer in his chamber of quiet labor. In the preface he emphasizes the importance of accurate observation, and says that only such objective methods of study can truly answer the questions which arise in scientific inquiry. This work is of universal authority; and writers

on the subject, whether English, French, Italian, Spanish, or German, never fail to quote from Virchow's Pathology of Tumors.

The labors of Virchow have not been confined to scientific work; he is a friend of popular instruction, and has liberally contributed his quota in that direction. A few years ago, in conjunction with Fr. von Holzen-dorff, he commenced the publication of a series of addresses in popular form on subjects within the domain of literature, history, medicine, and natural science; to-day the work has reached to nearly the number of seven hundred addresses, and those which have relation to medicine or to natural science have been supervised by Virchow. Although these addresses are popular in character, they have yet been prepared by their learned authors with such care that the educated reader will be repaid for the perusal of any of them. Here, as in other cases where Virchow has been an associate writer or publisher, he has outlived his fellow collaborator; the position of Holzen-dorff is now filled by Wattenbach. I may remark that the course of public lectures, annually delivered at Cooper Medical College, is somewhat analogous to some of those in the series here referred to. Such lectures, besides giving the public glimpses of the progress which legitimate medicine is making, do still further good in placing within the hands of the people a few hygienic weapons with which to fight the battle of life.

To what has been mentioned Virchow has added other literary work, consisting of memorial addresses, papers on public hygiene, and on topics kindred to Medicine. Here, especially in the addresses on Schö-nlein, Müller, and Goethe as naturalist, he has given evidence that his pen is at home in a field far removed from the pathological. In speaking of Goethe's recreations in natural science, Virchow says that the nobility of Goethe's character was manifest in the fact that, when tired in the service of his muse, he found content in excursions into Nature's realm of the eternally beautiful and the eternally true. Virchow's Essay on Sickness and Health is delightfully written; that he has faithfully depicted the differences of these conditions, will find affirmative response in the experience of most readers. In the dissertation in which he deals with the mechanical conception of life, the all-important part performed by the cell is told in a most interesting manner, and the subject made plain to the ordinary reader.

Virchow was an active participant in the deliberations of the famous association founded by Oken, named the Society of German Naturalists and Physicians. Before this society he delivered, in 1865, an address, entitled "The Importance of the Natural Sciences; and their Development in Germany," every line of which is illumined with the light of exalted patriotism. This address awakened much feeling; so much resentment did it arouse in the mind of a Russian delegate to the Society, that he arose and left the hall. It was also vehemently attacked by the

press of Austria. These occurrences scarcely disturbed the composure of one who had a lance well disciplined in fiercer conflicts in the arena of Prussian politics.

In 1890, when the International Medical Congress met at Berlin, by unanimous consent of the medical profession of Germany, without a challenging rival, Virchow was selected as the one most worthy of the coveted position of presiding over that body; and the chaplet then placed on his brow was stirred by no breath of envy since it had the sanction of the medical men of all nations. The equal of Panum, one of his predecessors, his ear was no stranger to the English, French, and German languages in which the deliberations of the Congress were conducted. Like all learned Germans, he speaks English well.

Virchow's varied talents have found occupation in the fields of archeology and anthropology. A few years ago he spent a vacation on the site of ancient Troy, in company with Schliemann, who was engaged in exploration of the ground rendered sacred by Homer's muse. Virchow soon after published an interesting account of his observations there. In the field of anthropology he is a most diligent student. After the Franco-Prussian war he met M. Quatrefages, a co-laborer in the same science; but national disappointment and the memory of damage by Prussian bombardment to the National Museums of Natural History in the Jardin des Plantes, caused Virchow's former friend to turn coldly from him. As Ulysses learned, when the shade of Ajax turned slightly away, that the resentments of the dead are eternal, so Virchow learned that the wounds of national pride sting forever.

The visitor to Père la Chaise finds the tomb of La Fontaine surmounted by a monument on which are the forms of the animals which play such a part in his fables. Were a monument to be erected which should typify the various phases of Virchow's intellectual labor, it would be yet more diversified; and to add to that diversity, so striking in the portrait I have given of him, many pages might be written of his career as a politician. The limits of this article, however, will permit but brief reference to this remarkable chapter in his life's history.

By mental constitution Virchow is a controversialist; by precept and by practice he has taught that unless a man, when unjustly attacked, defends himself, he is lacking in duty. Besides the defensive, he has also taken a boldly aggressive part in scientific and in political assemblies, when error or when usurpation threatened encroachment. A recent example of this was a tilt in which his opponent was Haeckel; the latter was advocating the introduction in the text-books for youths, of the doctrines of Haeckel in regard to the origin and evolution of organic life. Virchow did not think that the doctrine of animal life and its phenomena, which Haeckel refers to, the spontaneous aggregation of Herr Kohlenstoff (Carbon) and Com-

pany, had been well enough proven to be ranged among common truths.

In his political course, Virchow has ever been the champion of popular rights. In the Prussian House of Representatives his voice has often been heard in fearless denunciation of ecclesiastical encroachment and of military absolutism. In 1875, when the church was seeking for alliance with the government, Virchow called the Emperor to account in words which scarcely any other tongue would have dared to utter. He has ever been an unflinching opponent to the military policy of Bismarck; the latter once challenged Virchow to a duel, to which challenge he received the answer, as popular rumor says, that Virchow would accept the challenge of Bismarck when the latter became the peer of the former in morality. In 1875 Bismarck complained of this opposition in terms which reminded one of the peevish whining of the sick Caesar when he says: "Give me some drink, Titinius, like a sick girl."

One of the noblest efforts of Virchow's intellectual life is an address, delivered only ten weeks ago, before the Royal Society of England. The subject was "The Position of Pathology Among the Biological Sciences." Although delivered from the rostrum where Faraday, Huxley, Tyndall, Buckle, and other representatives of the best intellect of England have stood, no abler address was ever there spoken. It was an offering at a noble shrine of the best fruits of one of the ablest and most thoroughly trained minds within the domain of medicine. In English as polished as his native Teutonic, and with a modesty which is ever the close companion of greatness, in simple, almost impersonal terms, he narrated his services to the science of medicine. This address is so full of learning, so eloquent, and so suggestive in many of its lines, that one who has but once read it, will not be therewith content, but must perforce read it again. To the medical scientist, as well as to the practitioner whose labor is gratuitous or ill-paid, the following quotation from it contains words of cheer: "True happiness is not based on the appreciation of others, but on the consciousness of one's own honest labor. How otherwise should we hold our ground in the midst of the turmoil of the day?" Similar words of Forster, Carlyle, and Emerson have cheered others in hours of unpaid-for and unthanked-for toil.

Virchow has made the whole medical profession heirs of his doctrine, and his lines of work and methods of research have been pursued with especial zeal by some of his pupils—among these may be mentioned Recklinghausen, Wegner, Orth, and Grawitz. As tireless worker and thoughtful investigator, Grawitz most nearly resembles his master.

A little less than twenty years ago I went abroad and spent over two years in study at some of the leading scientific and medical institutions of Europe; the purpose being to enjoy instruction at its prime sources from the lips of the masters. On review I should say that the time most profitably used, was five months spent in hearing a course of

eighty four lectures by Huxley, on Biology, and a semester spent in Berlin, where the time was divided between Langenbeck and Virchow. I registered as a student and took all the courses by Virchow. These were on the following subjects: one course on necropsies, one of lectures on pathology, one of the study of pathological material furnished by all the hospitals of the city, and a fourth course consisting of the microscopic study of pathological specimens. To the microscopic work, six hours daily were devoted, five days of every week, and this amount of time enabled one to pass cursorily over the field and to acquire the rudiments, at least, of pathology.

I first saw Virchow at his practical course in the necropsy-room; he entered in haste, almost breathless, and at once proceeded to his subject. The cadaver, frozen and in a room ice-cold, was examined according to the plan laid down in Virchow's manual entitled "Sections Technik." In the use of his special knife which he called the "pathologist's sword," he displayed wonderful expertness and faultless accuracy. Holding the brain in his hand, he cleaves it in parallel planes, so that it is divided into many thin lamellæ, which, like a book, can be opened and closed at any point, and the whole can afterwards be replaced in the cranium with but little sign of mutilation. Thus proceeding, disease at any point can be discovered. One saw Virchow at his best in his demonstrative course on pathology, given every Saturday. A long series of plates laden with morbid specimens was, one by one, brought along before him, and the special character of each explained. On one occasion the head of a horse that had died of glanders was the specimen chiefly considered; this head sawn through longitudinally so as to present the nasal cavities studded with ulcers, lay for an hour before him, while he discussed the disease of glanders. When the fatal character of the disease is considered, it is evident there was no small risk in thus standing over and breathing the effluvia from such a source of lethal contagion. On another occasion, numerous specimens from a case of variola lay before him while he gave an extended lecture on the disease. This was true courage, the constant endowment of the earnest scientist. During these lectures, the microscopic exhibits, mounted on instruments, were moved along before the students on a miniature railway track, which was fastened on the desks. When the plate of glanders or of variolous specimens was in circulation, I need scarcely say they made a very brief halt at my station.

This demonstrative course was commenced by directions to the students how to use their eyes; for this instruction a small block of wood was taken in the hand of the lecturer, who placed it in various positions so as to best bring in view its outlines, color, and differences of surface, while he demonstrated that the uninstructed eye sees but little of what it might observe.

In his lectures on pathology, the precious specimens preserved in alcohol in sealed jars were brought out and passed through the hands of the class. These specimens have furnished the imperishable facts that are to be found in his Cellular Pathology, and the Pathology of Tumors. No wonder that he watched the transit along the class of these jars with anxiety like a mother's when watching her infant in danger, nor that a sharp word of reproof often followed awkward handling.

How accurate was his knowledge of the pieces he was to consider in his demonstrative course, was shown on one occasion when, for the purpose of microscopic work, I had removed the merest fragment from a cerebellum; he instantly detected it, halted in his lecture, and administered a reproof to the unknown marauder. Carelessness and inattention on the part of a student was at once observed and often chided. One whose eyes wandered through the window to something outside, was notified that if he saw anything there more interesting than the lecture, he had better retire. A luckless American with Bödeker's Guide for Travelers, once wandered into his lecture-room, and soon giving book preference to lecturer, he received a sharp reproof.

Time is too short for Virchow; for completion of the work he always has on hand, the day should number more than twenty-four hours. Not infrequently he spoke three times in one day. Once I heard him lecture in the forenoon, and in the evening listened to a long political speech by him; in the afternoon of the same day he was engaged in sharp debate in the Reichstag, and all this while carrying on the writings before mentioned.

Political life has evident fascination for him, for, while these lines are being penned, the telegram comes that he is a candidate for reëlection to the House of Representatives. As a speaker Virchow is exceedingly calm and deliberate; and whether before a class of students or a political club, he is never carried away by the "torrent, tempest, and whirlpool of passion," but his uttered sentences, scarcely distinguishable from his written ones, are clear, logical, forcible, and convincing. In person Virchow is of average stature; his expression is that of extraordinary courage; and his attention once drawn to you, you feel as if he were fixing you, in focus, on the object-glass of his mental microscope.

A few years ago the French government, on the occasion of the death of Claude Bernard, deputed Gambetta to pronounce an *éloge* on the great scientist; this oration, replete with supreme eloquence, closed with the remarkable words: "We now offer our salutations to Claude Bernard on his entrance into immortality." The hand of Death had then closed the door against Envy. But a few months ago the world was witness of still greater salutations which greeted the ear of one yet living; men of all tongues, and of all climes where medicine is a cultivated science, sent gifts, offerings, and congratulations to Virchow on the an-

niversary of his seventieth birthday. So profusely were these honors heaped upon him, that had Horace put to him his question, *Natales grate numeras?* it could have received no negative answer. Among the offerings was a medallion of gold, the coinage of the gifts of many friendly hands. But as form chiseled from marble, and feature limned by the pencil, are perishable, these gifts of art were surpassed by another offering: this was a sheaf harvested from the best fields of German medicine, composed of fascicles written by hands trained by the great teacher; this offering, "the enduring produce of immortal mind," was the most noble and imperishable of all, since it was wrought by the merciful hand of Medicine, and, besides homage to the master, it contained a solace to pain and disease, the perpetual heritage of our race.

